

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: Kenneth E. Knapp et al.

Serial No.: 09/500,380

Filed: February 8, 2000

Examiner: C. Renner

Docket No.: RR-1645

GAU: 2652

For: SUBMICRON TRACK-WIDTH POLE-TIPS FOR ELECTROMAGNETIC  
TRANSDUCERS

April 12, 2004

MS No Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Declaration of Kenneth E. Knapp  
Under 37 C.F.R. § 1.131

I, Kenneth E. Knapp, declare:

1. I am an inventor of the invention claimed in U.S. Patent Application Serial Number 09/500,380, including independent claim 1, as amended on October 16, 2003.

2. Attached is a copy of an eight-page set of drawings entitled: "METHOD OF DEFINING SUB-0.5um NARROW TRACK," dated 5-24-99. These drawings show that I conceived the invention defined by independent claim 1 of the above-referenced patent application at least as early as May 24, 1999.

3. Patent protection was diligently pursued from on or before August 4, 1999 to the filing of U.S. Patent Application Serial Number 09/500,380 on February 8, 2000.

5. The above described conception and invention occurred in the United States, in and around Fremont, California.

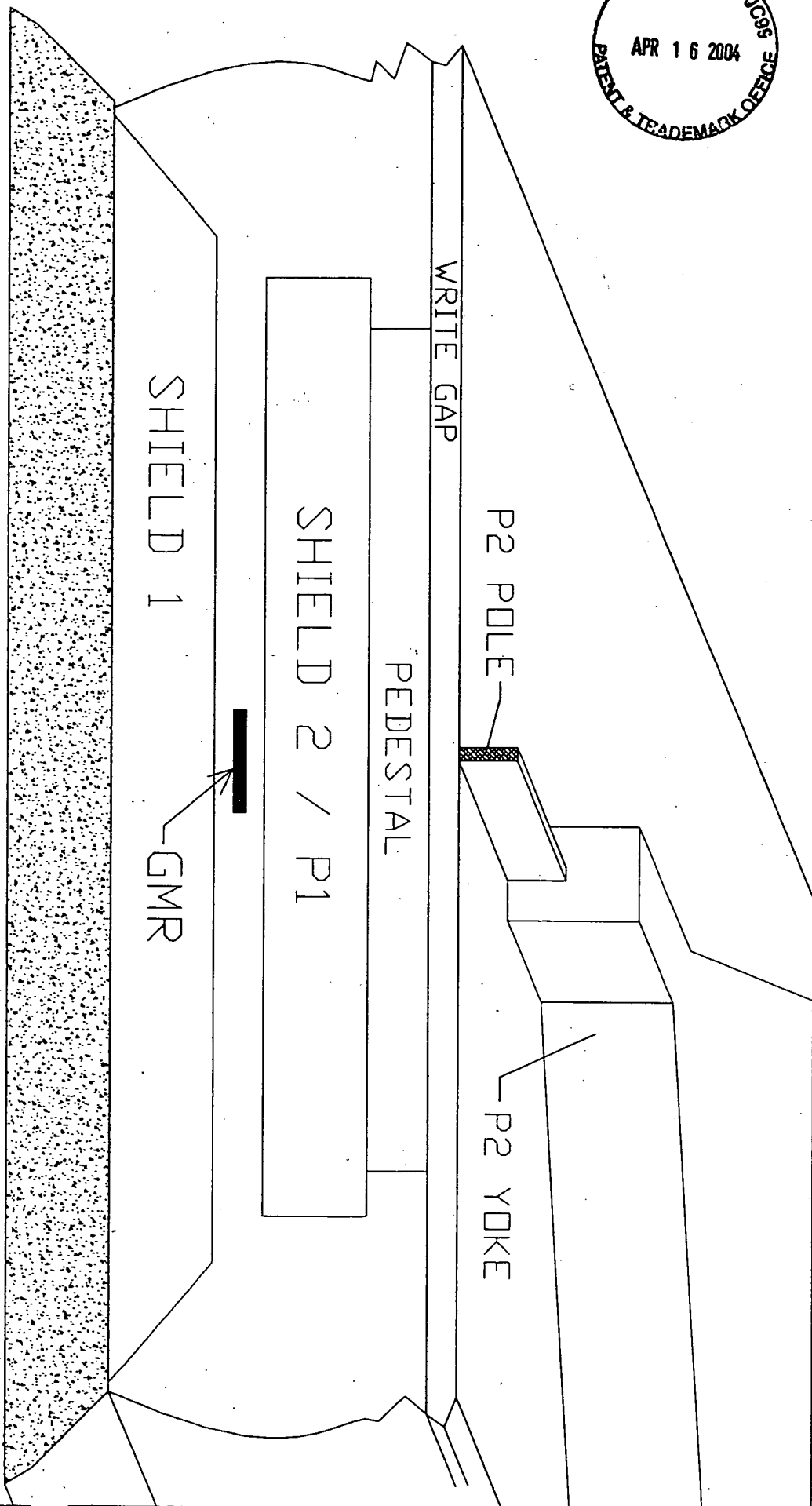
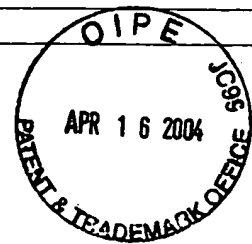
6. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001,

#25  
11/28/04

Title 18, of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: April 12, 2004

Kenneth E. Knapp  
Kenneth E. Knapp



"METHOD OF DEFINING SUB-0.5um NARROW TRACK"

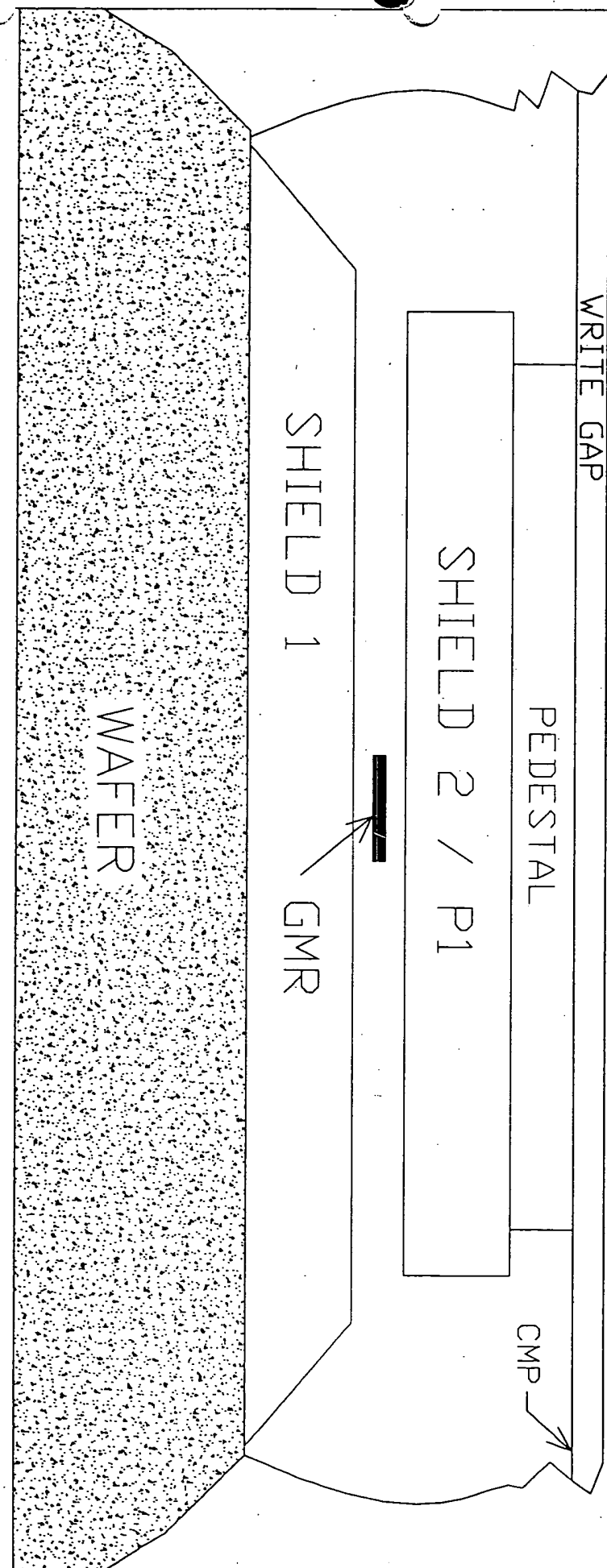
II

ABS VIEW OF NEW INVENTION

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	APPROVED RON BARR	

TITLE: "METHOD OF DEFINING SUB-0.5um NARROW TRACK"			
READ-RITE Corporation MASK DESIGN DEPT. FAX 510-683-7065			
SIZE B	STATUS REV	DATE REV	SCALE SHEET 1 OF 9

Sheet III



## PROCESS STEPS:

- STEP 1) STANDARD 12 GBIT PROCESS TO PEDESTAL CMP  
 STEP 2) DEPOSIT WRITE GAP, PROCESS COIL AND I2 (NOT SHOWN)



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TITLE: "METHOD OF DEFINING SUB-0.5um NARROW TRACK"

SIZE: 351014

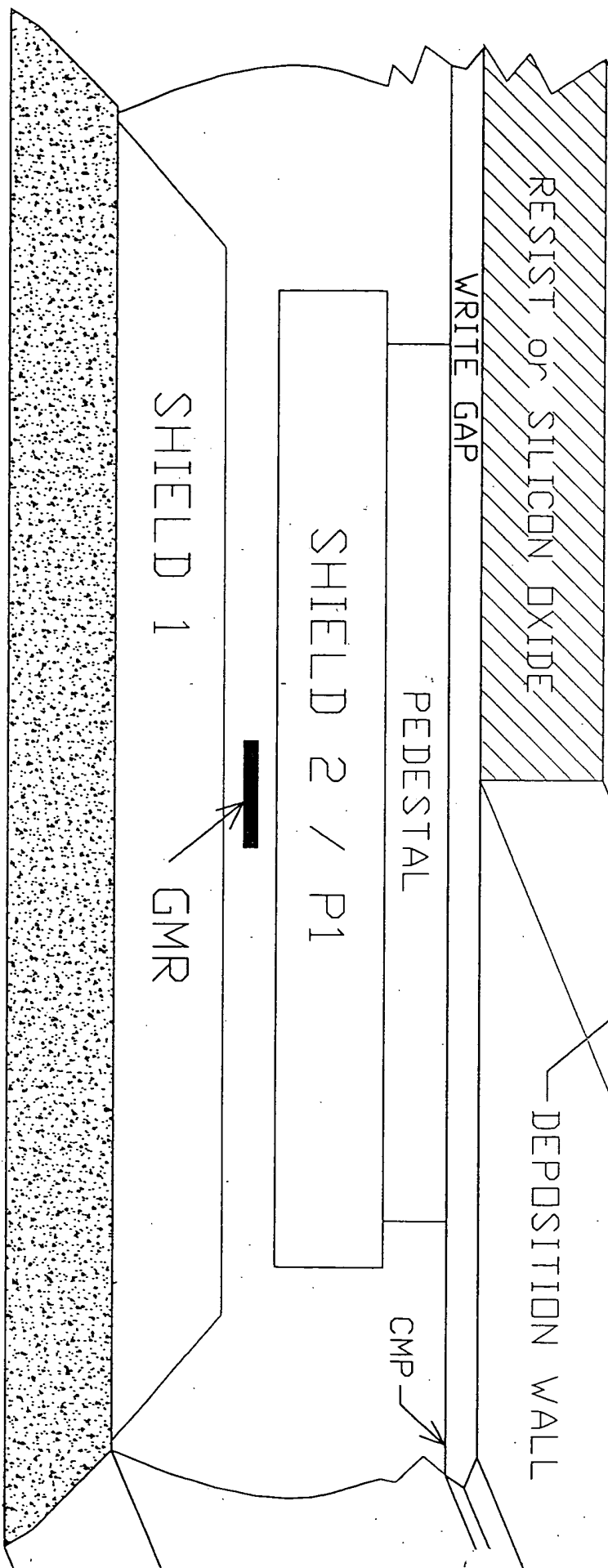
DWG FILE

REV

SCALE

SHEET 2 OF 9

Sheet IV

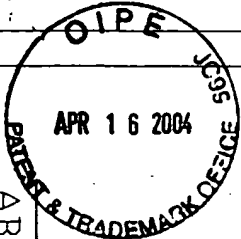


PROCESS STEPS:

STEP 3) CREATE PHOTORESIST OR SILICON DIOXIDE WALL

*James C. Tran*  
11/11/79

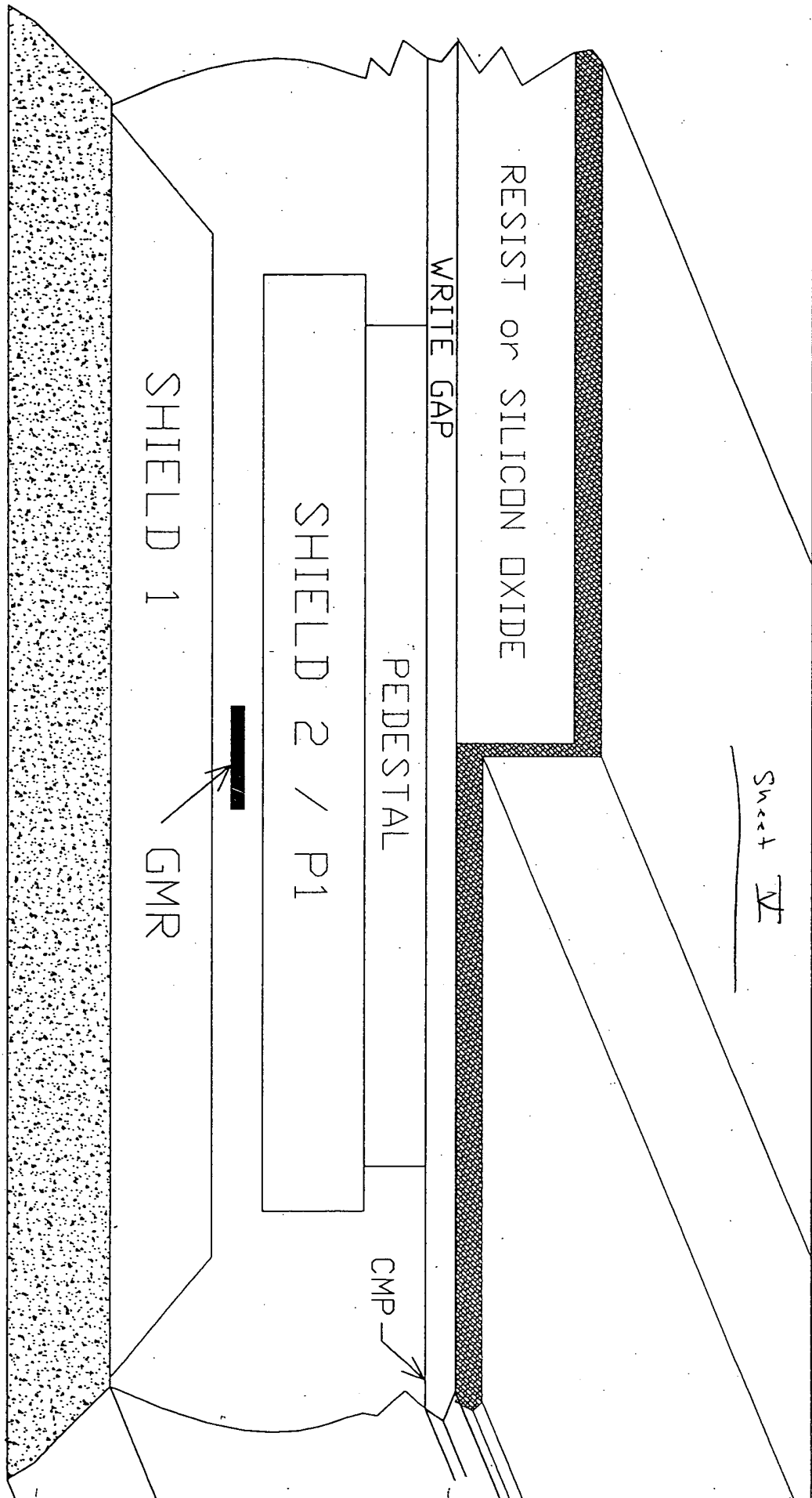
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SIZE B	SYSTEM	DWG FILE	REV
SCALE		SHEET 3 OF 9	

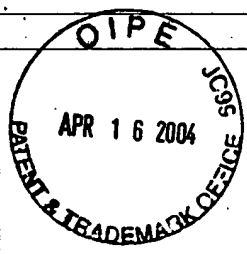
Sheet IV



PROCESS STEPS:

STEP 4) DEPOSIT P2 MATERIAL

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Sheet VI

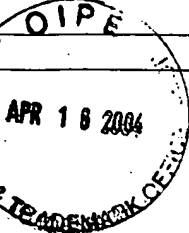
RESIST OR SILICON OXIDE

WRITE GAP

PEDESTAL

VERTICAL LAMINATIONS ARE POSSIBLE

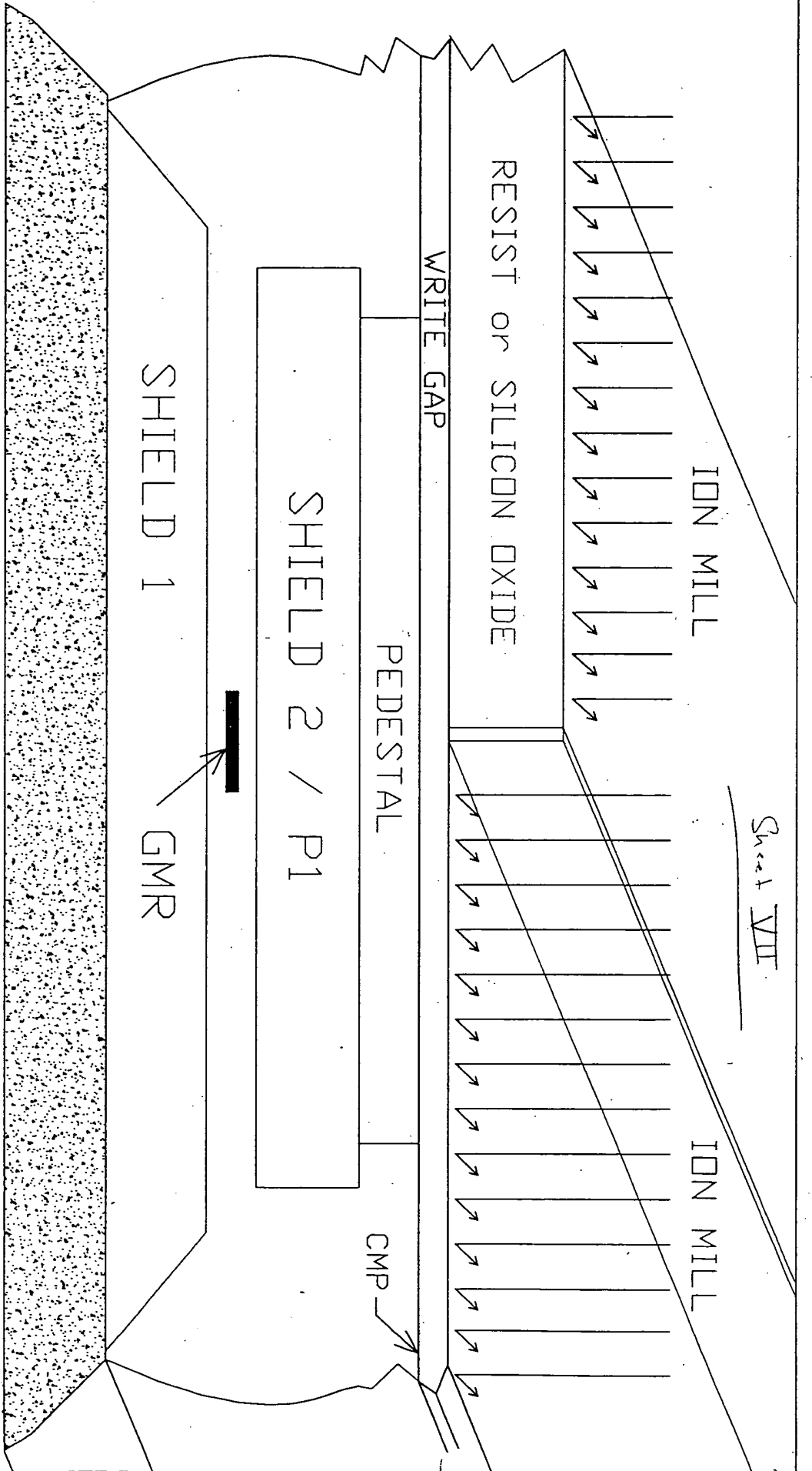
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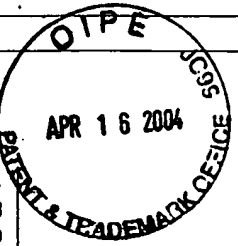
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SCALE	SHEET 5 OF 9		



PROCESS STEPS:

STEP 5) ION MILL TO CREATE THE P2 STRUCTURE

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"METHOD OF DEFINING SUB-0.5um NARROW TRACK"			
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B			
SCALE		SHEET 6 OF 9	



Sheet VIII

TRACK WIDTH

WRITE GAP

PEDESTAL

SHIELD 2 / P1

CMP

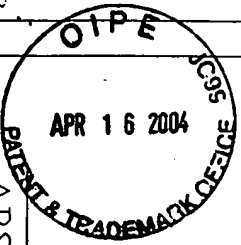
SHIELD 1

GMR

PROCESS STEPS:

STEP 6) REMOVE RESIST OR SILICON DIOXIDE WALL

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"METHOD OF DEFINING SUB-0.5um NARROW TRACK"

SIZE

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DWG FILE

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SCALE

SHEET 7 OF 9

Sheet IX

WRITE GAP

PEDESTAL

SHIELD 2 / P1

SHIELD 1

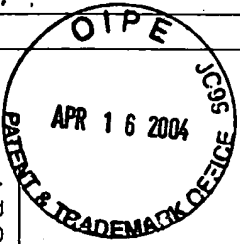
GMR

P2 YOKE

PROCESS STEPS:

STEP 8) MASK AND PLATE P2 YOKE

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"METHOD OF DEFINING SUB-0.5um NARROW TRACK"		B	
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